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# King Bhumibol Adulyadej's Sufficiency Economy Philosophy and Post-Traumatic Stress Disorder among Higher-Education Students from the Armed Conflict Region of Thailand

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## Abstract

This cross-sectional survey assessed the association between post-traumatic stress disorder symptoms and perceived self-sufficiency, reflecting the Sufficiency Economy Philosophy (SEP), conceived by H.M. King Bhumibol Adulyadej (King Rama IX). It was conducted among university students on one campus located within the area affected by the Southern Thailand insurgency and another campus located in a nearby province outside of the restive area. All self-administered questionnaires consisted of questions related to personal information, the Thai version of the PTSD checklist, and a questionnaire aimed at measuring the perceived self-sufficiency according to H.M. King Bhumibol Adulyadej's SEP. The study found that most university students in the restive area affected by the Southern Thailand insurgency perceived to live sufficiently according to H.M. King Bhumibol Adulyadej's SEP. The rate of perceived self-sufficiency was also higher than reported by the students from the other campus in a nearby province. Moreover, self-sufficiency exhibited a significant inverse association with PTSD symptoms.

**Keywords:** armed conflict, economy, philosophy, post-traumatic stress disorder, student

## Introduction

Over the 16 years—January 1, 2004, to April 14, 2019—of the armed conflict affecting some parts of the Southern Region of Thailand, 20,588 violent incidents have been officially reported; they have been responsible for 7,123 deaths and another 13,308 people injured.<sup>1</sup> This insurgency has primarily affected the Southern Border Provinces (SBP) of Pattani, Yala, and Narathiwat.<sup>1</sup> Consequently, local civilians, especially young people, have been at risk of many psychiatric disorders such as substance-related disorders and post-traumatic stress disorder (PTSD). Such cases have also been found to present more complicated symptoms than usual.<sup>2</sup>

According to DSM-5 and several other studies, post-traumatic stress disorder (PTSD) negatively impacts many dimensions of well-being—physical, mental, social, and economical.<sup>2-6</sup> Moreover, Hoeltherhoff and Chung,<sup>4</sup> maintain that “self-efficacy” is a mediator in controlling PTSD symptoms after the patient experienced life-threatening events. Higher education, being employed, and being “never married” were found to be protective factors among survivors of the 2001 World Trade Center attack.<sup>5</sup> Most prior studies on PTSD in Thailand have ex-

plored its prevalence and the symptoms predictive factors among survivors of natural disasters.<sup>6</sup> However, Sonpaveerawong, *et al.*,<sup>7</sup> reported that a critical protective factor from mental health problems related to natural disasters in Thailand, including PTSD symptoms, is the high social support that characterizes the Thai society. Together with cognitive behavioral therapy, the high social support has been supported by many studies to be effective in PTSD treatment among people residing in the insurgent areas of Southern Thailand.<sup>8</sup> So far, no previous study has attempted to elucidate a protective paradigm related to PTSD symptoms in the armed-conflict areas of Southern Thailand, which have markedly distinct contexts compared with the other parts of Thailand.

The Sufficiency Economy Philosophy (SEP) was introduced to the Thai people by the late H.M. King Bhumibol Adulyadej (King Rama IX) of Thailand over 40 years ago. Its core concepts were partly derived from Buddhist Economics, which focused on the “middle path” (*majjhimā paṭipadā*) and “self-actualization” (*vijā*) to handle the economy's supply chain. However, the late King Rama IX also engaged “sustainability” into his expanded philosophy to make it more practical.<sup>9</sup> The late

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King's SEP was endorsed by the Thai government as a national policy in 1997, during the Asian financial crisis, to cope with both the mental and economic situations that were pervasive at the time nationwide. The SEP model targets enhancing appropriate deliberation (moderation) based on rationality (reasonableness) and developing the risk-management skills (self-immunity) of Thai people. Moreover, this philosophy focuses on people's morality and pursuit of knowledge. Owing to its efficacy in yielding positive outcomes, the SEP has been enshrined in Thailand's constitutions from 2006 onwards.<sup>10</sup>

Besides economic outcomes, evidence of psychological benefit related to SEP has also been reported. In 2011, Jatchavala and Pitanupong surveyed lifestyle adaptations and attitudes toward H.M. King Bhumibol Adulyadej's SEP in a district of Songkhla Province, a nearby province to the restive areas of the South.<sup>11</sup> The survey found that people who perceived living sufficiently were 2.2 times happier than those who did not. Moreover, the participants who did not perceive living sufficiently had 1.6 times more health problems overall compared to those that perceived they were living sufficiently.<sup>11</sup> Another study on SEP among Thai farmers also reported that SEP had a strong positive effect on their subjective happiness.<sup>12</sup>

Thus, the main objective of this study was to examine the association between the perception of self-efficiency according to H.M. King Rama IX's SEP and PTSD symptoms among university students from the restive areas of Southern Thailand. Another aim was to discover a paradigm and associate factors that could help prevent psychological illness and improve mental health in populations, especially the young people who live in war zones or armed conflict areas.

## Method

Of 960 university students of Prince of Songkla University were approached for recruitment using convenient and straightforward randomization, following classification into three types of faculty: social sciences, health sciences, and pure/applied sciences. Of 480 participants were approached at the Pattani Campus, which is located within the area affected by the armed conflict of Southern Thailand. In contrast, another 480 participants were surveyed at the Hat Yai Campus located in the biggest city of a nearby province outside of the area directly affected by the insurgent violence. This study was part of more extensive research approved by the Ethics Committee of Faculty of Medicine, Prince of Songkla University (REC number: 61-071-3-1). Some data related to the participant's personal information, PTSD symptoms, and sense of self-sufficiency had been described in other reports.

The questionnaire was self-reported, and it consisted of three parts: (1) Personal and socioeconomic information such as age, gender, domicile, financial debt, physical health, history of mental diseases, perception of stress, and so forth; (2) The 17-item Thai version of the Post-Traumatic Stress Disorder Checklist (Thai PCL) employed a self-reported rating scale examining PTSD symptoms during three months. Its internal consistency had been reported to have a Cronbach's alpha coefficient of 0.961. In contrast, the cut-off point was reported to be at 30,<sup>13</sup> with 82% sensitivity and 76% specificity; and (3) The 35-item questionnaire of perceived self-sufficiency according to the philosophy of H.M. King Bhumibol Adulyadej, which had five domains consisting of 30 items related to self-perceived moderation, reasonableness, and self-immunity adaptation in one's daily life, and another five items involving one's attitude toward the knowledge-seeking behavior in respect to morality. This questionnaire was developed by the corresponding author and approved by three experts in 2011. Its cut-off point was determined to be 40 by a pilot study in another area of Songkhla Province, and its internal consistency was validated by a Cronbach's alpha coefficient of 0.67.<sup>11</sup>

This study used a cross-sectional design. The participants were approached by study assistants, psychiatrists/psychologists, and educators in their lecture rooms. The participants completed the self-administered questionnaires on a single occasion between August 8, 2018, and October 8, 2018, at the Prince of Songkla University campuses of Pattani, located in Southern Thailand's armed conflict area, and Hat Yai, located in a nearby province to the restive area.

All statistical procedures were completed using the R software package. The descriptive statistics such as those related to demographic characteristics (e.g., age, gender, and hometown) were categorized into two groups according to the campus the students were registered; the participants were represented in terms of frequency, percentage, median (interquartile range/IQR), and articulate mean. Univariate analyses were performed using the chi-square test, Wilcoxon rank sum test, and Kruskal-Wallis test for factors associated with PTSD symptoms. Moreover, a comparison of self-sufficiency perception between participants studying in the restive area and nearby provinces was conducted. Variables with a p-value less than 0.2 were included in the initial model of the multivariate analysis. The multivariate analyses were performed via logistic regressions, using the backward stepwise elimination method to examine the association between the perception of self-efficiency and PTSD symptoms. Any association which resulted in a p-value less than 0.05 was considered statistically significant.

**Results**

The overall response rate was 93.4% (Table 1). Most participants were Thai-ethnic female university students (94.1% and 80.3% vs. 99.6% and 81.5% at the Pattani and Hat Yai Campuses, respectively), who lived in university dormitories (72.9% and 87.9%, respectively) and perceived their economic status to be “middle class” (89.7% and 89.2%, respectively). Most of them reported having financial debt, mostly formal debt (93.3% and 73.8%, respectively), but not feeling any burden (46.0% and 47.5%, respectively). However, 28.5% of the Hat Yai-Campus students reported having taken an informal or “shark loan” compared to 10.4% of the participants from the Pattani Campus. In addition, the majority of the participants from both groups reported being healthy both physically (91.2% and 92.1%, respectively) and mentally (99.8% and 99.3%, respectively). They also tended to deny any history of domestic violence (98.4% and 97.5%, respectively), but their perception of stress related to insurgent violence was well-recognized (64.7%

and 65.1%, respectively). Religious affiliation and domicile were different between the two groups. The majority of the students from the Pattani Campus were Muslim (76.3%) and lived in the SBP areas (55.7%). In comparison, most participants from the Hat Yai Campus were Buddhist (76.8%) and domiciled in other provinces of Thailand outside of the areas afflicted by the unrest (46.8%).

Only 31.3% of the students studying at the Pattani Campus perceived living insufficiently compared to 40.6% of those who studied at the Hat Yai Campus. Although the majority in both groups reported being moderately self-sufficient (65.5% and 53.9% at the Pattani and Hat Yai Campuses, respectively), the students from Pattani, which is located in the armed-conflict area, perceived a significantly higher rate of self-sufficiency than those from Hat Yai, which does not lie in the area affected by the insurgency but in a nearby province (p-value = 0.001) (Table 2).

After univariate analysis (Table 3), the perception of

**Table 1. Participants' Demographic Information**

Demographic	Category	Total		Hat Yai Campus (n = 454)		Pattani Campus (n = 443)	
		n	%	n	%	n	%
Gender	Male	171	19.1	84	18.5	87	19.7
	Female	724	80.9	370	81.5	354	80.3
Age (years)	Median (IQR)	20	19, 21	20	19, 21	20	19, 21
Ethnicity	Thai	864	96.9	450	99.6	414	94.1
	Malay/Chinese	28	3.1	2	0.4	26	5.9
Religion	Buddhist	450	50.6	347	76.8	103	23.5
	Muslim	435	48.9	101	22.3	334	76.3
	Other	5	0.6	4	0.9	1	0.2
Domicile	Songkhla Province	196	22.2	132	29.1	64	14.8
	Southern border provinces	333	37.7	93	20.5	240	55.7
	Other provinces in Southern Thailand	329	37.2	212	46.8	117	27.1
	Other provinces in Thailand	26	2.9	16	3.5	10	2.3
Residence	Dormitory	711	80.4	391	87.9	320	72.9
	Other	173	19.6	54	12.1	119	27.1
Perception of economic status	Low income	45	5.0	24	5.3	21	4.8
	Middle income	798	89.5	404	89.2	394	89.7
	High income	49	5.5	25	5.5	24	5.5
Debt	No	348	39.0	181	40.0	167	38.0
	Yes, but no perception of it being a burden	417	46.7	215	47.5	202	46.0
	Yes, and perceived it to be a burden	127	14.2	57	12.6	70	15.9
Source of loan	Formal loan						
	No	87	16.3	69	26.2	18	6.7
	Yes	446	83.7	194	73.8	252	93.3
	Informal loan						
	No	430	80.7	188	71.5	242	89.6
	Yes	103	19.3	75	28.5	28	10.4
History of physical diseases	No	821	91.6	418	92.1	403	91.2
	Yes	75	8.4	36	7.9	39	8.8
History of mental illness	No	882	99.5	448	99.5	434	99.8
	Yes	4	0.5	3	0.7	1	0.2
History of domestic violence	No	856	97.9	431	97.5	425	98.4
	Yes	18	2.1	11	2.5	7	1.6
Perception of stress due to insurgent violence	Yes	307	35.1	154	34.9	153	35.3
	No	568	64.9	287	65.1	281	64.7

Notes: There were missing values for some variables, IQR: Interquartile Range. n: Sample of Participants

self-sufficiency among students studying at the Pattani campus was found to be negatively associated with PTSD symptoms (p-value <0.001). The same statistically significant association was also detected regarding the participants studying at the Hat Yai Campus (p-value =

0.007). When analyzing the 897 participants in total (all students from both campuses), a higher perception level of self-sufficiency according to the late King Rama IX's SEP was also associated with significantly fewer PTSD symptoms (p-value <0.001).

**Table 2. Comparison of Self-Sufficiency Perception among Students at the Hat Yai and Pattani Campuses**

	Total		Hat Yai Campus (n = 454)		Pattani Campus (n = 443)		p-value
	n	%	n	%	n	%	
Perception of self-sufficiency							0.001*
Insufficiency (score <40)	321	36.0	184	40.6	137	31.3	
Moderate sufficiency (score 40-49)	531	59.6	244	53.9	287	65.5	
Rigorous sufficiency (score ≥50)	39	4.4	25	5.5	14	3.2	
Median (IQR)	42 (38-45)		41 (37-45)		42 (39-45)		0.040 <sup>a*</sup>

Notes: <sup>a\*</sup>: p-value from the Wilcoxon rank sum test, IQR: Interquartile Range

**Table 3. Association between the Perception of Self-Sufficiency and Post-Traumatic Stress Disorder Symptoms among Students at the Hat Yai and Pattani Campuses**

PTSD Symptoms	Perception of Self-sufficiency (Score)						p-value
	<40		40-49		≥50		
	n	%	n	%	n	%	
Hat Yai campus (n = 454)	184	100	244	100	25	100	0.007*
Negative (score 1-29)	139	75.5	213	87.3	21	84.0	
Positive (score ≥30)	45	24.5	31	12.7	4	16.0	
Pattani campus (n = 443)	137	100	287	100	14	100	<0.001*
Negative (score 1-29)	71	51.8	221	77.0	11	78.6	
Positive (score ≥30)	66	48.2	66	23.0	3	21.4	
Both groups in total	321	100	531	100	39	100	<0.001*
Negative (score 1-29)	210	65.4	434	81.7	32	82.1	
Positive (score ≥30)	111	34.6	97	18.3	7	17.9	
Median (IQR)	22 (17-35)		20 (17-26)		20 (17-25.5)		0.001 <sup>a*</sup>

Notes: <sup>a\*</sup>: p-value from the Wilcoxon rank sum test, PTSD: Post-Traumatic Stress Disorder, IQR: Interquartile Range

**Table 4. Factors Associated with Post-Traumatic Stress Disorder Symptoms among University Students at Pattani Campus**

Demographic	PTSD among University Students		p-value (LR test)
	Crude OR (95% CI)	Adjusted OR (95% CI)	
Age	0.79 (0.66-0.93)	0.78 (0.65-0.95)	0.006
Ethnicity			0.034
Thai	1		
Malay/Chinese	2.81 (1.11-7.11)	3.08 (1.09-8.72)	
Domicile			0.004
Other provinces in Southern Thailand	1	1	
Southern border provinces	2.04 (1.21-3.42)	1.92 (1.15-3.27)	
Songkhla Province	0.98 (0.46-2.10)	0.88 (0.4-1.95)	
Other provinces in Thailand	0 (0-Inf.)	0 (0-Inf.)	
Perception of stress due to insurgent violence			0.019
No	1	1	
Yes	1.73 (1.12-2.68)	1.76 (1.10-2.82)	
Perception of self-sufficiency			<0.001
Sufficiency (>40 points)	1	1	
Insufficiency (<40 points)	3.19 (2.03-5.00)	3.35 (2.09-5.39)	

Notes: PTSD: Post-Traumatic Stress Disorder, LR: Likelihood Ratio, OR: Odds Ratio, CI: Confidence Interval

In the multivariate analysis (Table 4), age, ethnicity, domicile, perception of stress, and perceived self-sufficiency were found to be significantly associated with PTSD symptoms among the participants who studied in the restive area. Older students were at 0.78-times higher risk for experiencing PTSD symptoms for every year they were older than their younger counterparts (95% CI = 0.65, 0.93). Meanwhile, the Malay/Chinese ethnic students and those whose domicile was in the SBP of Thailand were at 3.08- and 1.92-times increased risk for suffering from PTSD symptoms compared with those who were Thai ethnics and domiciled in provinces not affected by the insurgency (95% CI = 1.09, 8.72, and 1.13, 3.27 respectively). Furthermore, students who reported self-perceived stress related to the insurgency were found to face a 1.76-times higher risk of experiencing PTSD symptoms than those who did not (95% CI = 1.10, 2.82). In addition, a 3.35-times higher risk for developing PTSD symptoms was reported among participants who perceived they did not live sufficiently compared with those who did (95% CI = 2.09, 5.39).

## Discussion

This study was the first study to explore associations between the late King Rama IX of Thailand's Sufficiency Economy Philosophy and mental disorder symptoms. This survey identified young people and ethnic minorities as susceptible populations for post-traumatic stress disorder symptoms like many prior studies.<sup>14</sup> The majority of this study's participants residing in the armed-conflict areas of Thailand were Muslim, while most of the surveyed university students in a nearby province to the restive areas were Buddhist. The latter seemed to understand and apply the late king's philosophy more efficiently, most likely because it was derived from the Buddhist Economics concept. However, the authors found that participants from the restive areas, predominantly Muslim, reported living self-sufficiently at a higher proportion than those who were domiciled in non-restive provinces.

Nevertheless, Buddhists and Muslims share the same goal of living/having a "good life." The extinction of the "three fires," greed, aversion, and ignorance, could be interpreted in light of the concept of "nibbāna" as the ultimate spiritual purpose in traditional Buddhism. In contrast, the "*hayatan tayyibah*" concept represents the pursuit of a good wholesome life in Islamic philosophy, which entails contentment in the present life and the hereafter in paradise.<sup>15,16</sup> In Islam, the attainment of a good life, known as "*Qana'ah*" or "self-contentment," is believed to lead to a reassured soul (*Nafs-ul-Mutmainnah*) in one's pursuit of the "good wholesome life".<sup>17</sup> Therefore, the overlap of some SEP concepts with those of Islamic philosophy, which are beneficial for both men-

tal health promotion as well as toward the eradication of poverty in the armed-conflict areas of Southern Thailand.<sup>18</sup> The application of this philosophy could prove instrumental in helping improve the campus ethos as well as the community's capacity to ensure resilience. In regards to this, a study that was a part of this project reported a significant association between better resilience and a lifestyle in line with the late King Rama IX's SEP.<sup>19</sup>

However, since most of the university students studying within the armed-conflict zone and an area not directly affected by insurgent violence perceived self-sufficiency, it may be concluded that religion might not be a limitation for applying the late King's SEP in practice. Sufficiency Economy Philosophy may help achieve sustainable growth by improving health care for developing countries, especially those in South-East Asia.<sup>18,20</sup> Regarding the association of PTSD symptoms with a perceived self-sufficient lifestyle, it needs to be pointed out that not all participants who reported positive results via the screening test would have been necessarily diagnosed with post-traumatic stress disorder. Since a psychiatrist's diagnosis is the gold standard for diagnosing a mental illness, other mental disorders like generalized anxiety disorder and major depressive disorder could have been diagnosed in such cases, as they share some of the PTSD symptoms.<sup>21</sup>

However, since cognitive-behavioral therapy (CBT) has been reported to be efficient psychotherapy not only for PTSD but also for many other psychological diseases such as anxiety and depression, it could be said that it would be feasible to incorporate the core concept of the late king's SEP into the CBT techniques.<sup>22</sup> In other words, adjusting one's attitudes and actions following the concept of the "middle way" (moderation) using logic (reasonableness) could enhance "reality testing," a CBT technique, leading to cognitive changes. Meanwhile, risk management (self-immunity) could be applied along the lines of "behavioral experiments" through the process of trial and error.<sup>23</sup> However, since the evidence supporting the use of the late King Rama IX's SEP as a protective strategy for mental disorders is still insufficient, further studies are needed on this topic.

## Conclusion

In the armed-conflict areas of Southern Thailand, people who belong to the Malay ethnic minority are young, a student in the university, and reside in the Southern Border Provinces of Thailand. They have an elevated risk for PTSD symptoms; the same is true for those experiencing stress related to the insurgent violence and who lead a self-insufficient life. However, the students from areas affected by the armed conflict were statistically more self-sufficient than those who studied in a nearby

province outside of the restive area. According to H.M. King Bhumibol Adulyadej's SEP, living self-sufficiently was statistically associated with fewer PTSD symptoms in both groups.

However, this study was designed as a cross-sectional survey; thus, even though factor association could be examined, no cause and effect could be established. Cohort studies are suggested for further study in the future. Moreover, since any philosophy can be interpreted in several ways, both qualitative and multi-level analytic studies could assist in furthering the knowledge and practical application related to this topic.

#### Abbreviations

SBP: Southern Border Provinces of Thailand, PTSD: Post-Traumatic Stress Disorder, SEP: Sufficiency Economy Philosophy; IQR: Interquartile Range; CBT: Cognitive-Behavioral Therapy.

#### Ethics Approval and Consent to Participate

This study was approved by the Ethics Committee, Faculty of Medicine, Prince of Songkla University (REC number: 61-071-3-1). Participants were provided with an informed consent form to sign by the research assistants. The consent form contained detailed information regarding the study's objectives, risks, and benefits.

#### Competing Interest

The author declares that there are no significant competing financial, professional, or personal interests that might have affected the performance or presentation of the work described in this manuscript.

#### Availability of Data and Materials

The data of this study's findings are available upon reasonable request to the corresponding author and the Department of Psychiatry, Faculty of Medicine, Prince of Songkla University, Thailand. However, the data are not available to the public regarding the participants' privacy and security.

#### Authors' Contribution

CJ designed the study, reviewed the literature, and analyzed and interpreted the data. AV supervised and edited the manuscript contents. Both authors discussed the findings and contributed to the manuscript preparation.

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